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June 10, 1998

Secretary
Federal Communications Commission
Washington, D.C. 20554

JUN 10 1998

Re: CC Docket 94-102 / wireless E9-1-1

Dear Madame Secretary:

Pursuant to Section 1.1206 of the Rules, this gives notice of a meeting today with Ari Fitzgerald, Legal Advisor to the Chairman. In the meetings as representatives of public safety communications organizations, including the National Emergency Number Association ("NENA") and the Association of Public-Safety Communications Officials-International, Inc. ("APCO") were:

John Melcher, Director, Management Information Systems,
Greater Harris County (Houston), Texas 9-1-1 District;

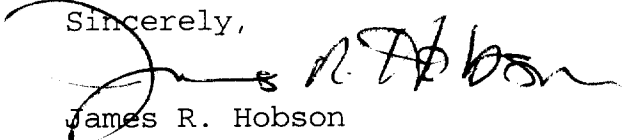
Bob Gurss, Counsel for APCO;

and the undersigned, as Counsel for NENA.

We discussed the points mentioned on the enclosed pages under the general headings of "strongest signal;" wireless-wireline interconnection for E9-1-1 purposes; and Phase II accuracy measurements.

Please direct any questions to the undersigned.

Sincerely,


James R. Hobson

cc: Ari Fitzgerald

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Public Safety Points
June 10, 1998
NENA * APCO * NASNA

Strongest Signal

1. Response to Alliance engineering firm, Trott, filed 2/23/98
 - a. Offered to meet with Trott.
 - b. Alliance asked Trott to call.
 - c. No contact with Public Safety from Trott.
2. Three concerns in Public Safety response of 2/23/98:
 - a. Automatic invocation of strongest control channel would reduce choices from two carriers to one in areas where one carrier predominates. In cases of mass calling ("good Samaritan" syndrome), the concentration of calls on one carrier would affect entire broader area served by common MTSO.
 - b. What if strongest control channel carrier has inferior location capability, or none at all? This forces caller onto service where he cannot be located. *Consequence:* Disincentive to add or improve radiolocation. [In fact, contrary incentive is to "turn down" control channel strength, let stronger competitor take all 9-1-1 calls.]
 - c. Public safety would rather receive a call on an adequate voice channel -- with location -- than a call that might be better than adequate but without location.
3. There is an alternative: A/B or B/A, meaning switch to alternate carrier when preferred offers poor or no signal.
4. We see strongest signal as requiring standards change to scan all control channels on A and B systems. The same standards body can decide merits of proposal.

Wireless-Wireline Interconnection

1. In 2/17/98 Petition for Reconsideration in CC Docket 94-102, CTIA asks FCC to declare that in event of negotiation impasse, carrier gets to choose transmission technology.
2. Public Safety opposed because:
 - a. It is responsible for overall reliability of wireless/wireline/PSAP system.
 - b. Public money is asked in payment.
 - c. Need freedom to accommodate multiple carrier needs.
3. Our request: Don't load the dice in negotiations by answering CTIA's request. Force parties to keep bargaining.

Phase II Accuracy

1. Public Safety, CTIA and PCIA have disclaimed any intent to change Phase II location accuracy target of 125 meters RMS.
2. RMS is a statistical technique that recognizes some location points will be wide "out-lyers" well beyond 125 meters.
3. In 3/20 and 4/6/98 ex parte filing, Ericsson claims FCC has changed the standard by interpretation from the July 1996 order to the December 1997 reconsideration order.
4. We disagree. The standard remains as it was. "67%" was always read (except by Ericsson) as an approximation of RMS -- fully explained in attachments to the Consensus Agreement filed 2/96.
5. Ericsson has vastly increased the out-lyer effect by plugging in large cell radiuses under the Phase I "fallback" location if Phase II data fails. That is not necessarily demanded by the Phase II rule.
6. We are working with the industry to look into Ericsson's problem. We ask for no change in the Phase II accuracy standard until the problem has been worked thoroughly.

Public Safety Response to the Alliance Trott Report

February 23, 1998

This statement from three national public safety communications organizations* is in response to the "Trott Report" of January 27, 1998, which was prepared for the Ad Hoc Alliance ("Alliance") for Public Access to 9-1-1. As the Commission is aware, there is an ongoing debate between the wireless industry and the Alliance as to the technical merits of "strongest signal" and whether or not a new standard is needed to implement it. As requested by the Commission, public safety and the wireless industry have met with the Alliance on several occasions and have formed the Wireless E9-1-1 Implementation Ad Hoc ("WEIAD") to address wireless 9-1-1 issues, including the Alliance's proposal.

We have several concerns, from a public safety perspective, regarding the "strongest signal" concept. The wireless industry and the 9-1-1 service providers are building 9-1-1 trunks from the mobile switching offices to the 9-1-1 tandems, engineered to support a P.01 grade of service, as is the norm for wireline. We provision trunk groups by region in order to enable default routing of calls in the event of an ANI failure, as well as to provide a choke-point to limit the debilitating effects (on the PSAP) of large spikes in call volume; again, as is the practice with wireline 9-1-1. Specific trunk groups are assigned and circuits are sized for each individual carrier between the cellular mobile switching offices and the 9-1-1 tandems.

Thus, the two wireless cellular carriers in each licensed service area provide not only separate voice channels, but also separate 9-1-1 trunks. But this useful duplication of capacity would be lost in the Alliance proposal. By design, "strongest signal" would totally eliminate the carrier that has the weaker RF signal in a given area from processing any calls and force all 9-1-1

* National Emergency Number Association ("NENA"), Association of Public-Safety Communications Officials-International, Inc. ("APCO") and National Association of State Nine-One-One Administrators ("NASNA"). The statement is submitted to the Federal Communications Commission ("FCC"), pursuant to Section 1.1206 of the Rules, as an ex parte communication in the Further Notice of Proposed Rulemaking in CC Docket 94-102, 11 FCC Rcd 18676, where at ¶144 comment was sought on an Alliance proposal that 9-1-1 calls be forwarded to the cellular system with the strongest control channel signal.

traffic to the carrier with the stronger forward control channel (FOCC). Not only will this reduce the ability to transport 9-1-1 calls from the local area by approximately 50%, in addition, 9-1-1 calls from any other point within the region served by the same mobile switching office may also be blocked, regardless of the availability of a perfectly satisfactory voice channel and available 9-1-1 trunks from the other carrier. Furthermore, the strongest control channel will not always deliver the strongest voice channel. If a voice channel is not available at the cell site sector where the strongest control channel is transmitted, the cellular phone will be redirected to another sector and/or cell site which may produce a weaker voice channel than the one assigned by a weaker forward control channel from the other carrier.

Our second concern is that some of the carriers will meet Phase I and Phase II caller location mandates much sooner than others. As the Commission is aware, New Jersey has successfully demonstrated a live 9-1-1 Phase II trial. New Jersey hopes to deploy Phase II in 1998. Texas and other states are also embarking on early implementation of Phase II technology. However, the "strongest signal" concept is having a negative effect on the willingness of the carriers to move forward with location technology prior to October 1, 2001. Carriers who are stepping up first to provide Phase II location are hoping to use the system to increase their market share, which, in turn, will help offset some of the costs of location technology. The "strongest signal" concept will cripple the ability to market 9-1-1 location service. What cellular carrier would agree to collect a surcharge for, and build, 9-1-1 location technology if the "strongest signal" rule could cause their system to be bypassed when needed most? And even if we are able to convince the carriers to move forward with location technology, who will take accountability for moving the caller from his carrier of choice, with location technology, to the other carrier which does not have location technology and is, therefore, unable to provide the location data for which the subscriber may be paying a premium?

Our third concern is related to this same issue of caller location. From a public safety perspective, we feel it is better to receive a 9-1-1 call with Phase I and/or Phase II location technology than one with a slightly stronger signal but without Phase I and/or Phase II technology.

The Trott report seems to overlook the fact that signal strength need only be adequate, not the strongest. If you can talk in a normal voice to someone, does shouting make it better? We suspect not. The cell sites and phones need sufficient signal, and if the signal is stronger, then the cell site's power controls the phone to reduce its power. Words like "weak" or "strong" have little meaning because they are subjective. "Stronger" does have meaning because it implies that one signal is being compared to another signal. We disagree with the Trott report that the presence of a weak and inadequate preferred signal will prevent the handset from switching to the non-preferred system. Cell sites have the ability to measure signal level, and there are specific quality thresholds like a carrier-to-interference (C/I) ratio of 18dB, or signal level > -110 dBm. If a phone is locked, it is registering. The cell site responds to every registration to confirm to the phone. If the phone can see the cell site with enough power, and if the cell site can see the phone at or above the thresholds, the phone can register and be confirmed, and calls can be carried. If the phone is below thresholds, registration and calls cannot be completed, and the phone will seek another forward control channel from the preferred carrier or the non-preferred carrier depending on the programming of the mobile unit.

The advantages of Phase I and Phase II must not be underestimated. As we have pointed out on several occasions, "we can't help them if we can't find them." The Alliance "strongest signal" proposal is but a single approach to reaching the goal of, "the call must go through." We fear "strongest signal" will actually have the opposite result. Given the indisputable fact that "strongest signal" will eliminate the weaker carrier, and with it, half of the call handling capacity in the area, it is far less effective than programming cellular phones for A/B and B/A.

"A/B" or "B/A" ("A over B" or "B over A") means that analog cellular phones can be built or programmed to switch to the alternate carrier when the preferred carrier provides no signal or an inadequate signal below the established threshold. This option is available today for the over 50 million existing phones and new phones without a single alteration to hardware, software or their associated standards. We have heard repeatedly from the Alliance about the two cases in California where it was reported that the caller could not reach 9-1-1 on a cellular phone. We still have

unanswered questions about those incidents. Was the phone programmed for A or B side only or A/B or B/A? Did the cellular carrier have available talk channels at that moment in time? Were 9-1-1 trunks available from the cellular mobile switching office to the 9-1-1 tandem at that moment in time? Does the Alliance truly understand that "strongest signal" will actually cause 9-1-1 calls to be blocked if the "stronger" carrier's voice channels are all in use or its switching office-to-tandem trunks are at capacity?

A better way to address the "coverage holes" identified by the Alliance may be to simply program the cellular phones for A/B or B/A. We have proposed this solution to the Alliance but they believe it is insufficient. They contend that the shift from A to B or B to A only occurs when the preferred carrier's signal offers no signal and leaves at risk calls from areas where the preferred carrier's signal is too weak to seize or maintain a voice connection but not weak enough to cause the rollover. We disagree with this contention as stated earlier. The standards which govern AMPS telephones (ANSI/EIA/TIA-553-1989) clearly describe the process of A/B and B/A on page 2-12, "If the mobile station cannot complete this task on the strongest dedicated control channel, it may tune to the second strongest dedicated control channel and attempt to complete this task within a second 3-second interval. If it cannot complete this task on either of the two strongest control channels, the mobile station may check the serving-system status: If the serving-system status is enabled, it may be disabled (A/B); if the serving-system is disabled, it may be enabled (B/A). The mobile station must then enter the Scan Dedicated Control Channels Task (2.6.1.1)."

There are approximately 35,000 cell sites in the country, and certainly for cellular, coverage is usually not the issue. Frequency re-use and frequency management is the real issue. Carriers have only 3 real tools to manage frequency re-use: antennae type, antennae downtilt, and cell site power level. Most of the cellular build-out that has happened in the last 3 years has been to add cell sites to permit further re-use. Coverage has been growing only gradually, and then only in unique circumstances, like state parks and the Pinelands of New Jersey where the difficult siting issues are. In the most heavily used parts of cellular systems, coverage has been adequate to good.

Carriers usually do not leave blank spots, but are trying to avoid interference. Carriers do regular drive testing of their system to verify "best server" and "second best server". Carriers also use RF modeling and propagation tools to assist in determining appropriate levels to set power at each site.

We also have a fourth concern, that if a channel is lost as result of a moving event, a redial may very well connect the caller to another carrier and another PSAP. The Alliance makes the point that, often, a carrier will assign a voice channel and then release it because the level is too low. We have seen calls dropped on a few occasions, usually several miles from where the channel was originally acquired. "Strongest signal" does nothing to mitigate this phenomenon, which is usually associated with a moving caller. It may be dependent on the caller's direction of travel and the total cellular traffic at that particular moment in time. However, the control channel and up to 19 (typically 16 or 17) voice channels are connected to the same antenna combiner and its antenna. The control channel transceiver and the voice channels transceivers are on par. We agree with the statement in the Trott report in section 3, page 4. The report stated, "We reiterate that the design of cellular systems mandates that control channel signal strength will be less than or equal to the associated voice channel signal strength from the cell site." If the control channel is adequate, then so are the voice channels and a conversation can be carried.

Although we would prefer to leave the issue of standards changes to the wireless industry and manufacturers, we are puzzled by their statement in the Trott report on page 5, section 6, and their statement on page 6, section 7. On page 5 Trott states, "The cell phone today already scans the full list of forward control channels (both A and B system) during its power-on sequence and whenever signal is lost from the preferred system." And then on page 6, "No new standard is needed for this action." That position appears to be in conflict with our copy of the standards approved April 19, 1989. On page 2-11 of ANSI/EIA/TIA-553-1989 standards, section 2.6.1.1.1 "Scan Dedicated Control Channels" states, "If the serving-system status is enabled, a mobile station must examine the signal strength on each of the dedicated control channels assigned nationwide to System A. If the serving-system status is disabled, a mobile station must examine the signal strength on each of the dedicated control channels assigned nationwide to System B."

Nowhere in the standard could we find a process where the full list of forward control channels for both A and B (42 in the U.S., 52 in Canada) are scanned.

This has been the public safety community's basis for assuming that Alliance's proposal would involve a change of standards, and this is why we supported the WEIAD-3 suggestion that the proposal be submitted to the standard-setting body known as TR-45. If our assumption is incorrect, we still believe that only an objective systematic analysis, not undertaken thus far, will determine whether "strongest signal" is worth the reduction by half of the cellular capacity available to transmit wireless 9-1-1 calls, in addition to the other serious problems enumerated above.